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REF: ANY RECENT REFUGE 47, PARAGRAPH "P"

25X1 1. [redacted] HAS, FOR SOME TIME, BEEN ATTEMPTING TO DETERMINE THE SOURCE, ACCURACY, CONVENTION, AND PRECISE DEFINITION OF S/I CALIBRATION DATA (PITCH, ROLL, AND YAW) AS LISTED ON EACH 4000 25X1 SERIES MISSION REPORT NUMBER 47 (REF.). IN DISCUSSIONS AT [redacted] IT 25X1 WAS SUGGESTED BY THEM THAT [redacted] COULD POSSIBLY SHED MORE LIGHT ON THE PROBLEM.

2. IF THE FOLLOWING QUESTIONS CAN BE ANSWERED, ONE AT A TIME, A GREAT MANY ORIENTATION PROBLEMS CAN BE SOLVED:

A. DO THE THREE FIGURES GIVEN REPRESENT DIFFERENCES BETWEEN THE ORIENTATION OF THE S/I UNIT AND THE PRIMARY CAMERA UNIT AS MOUNTED IN THE VEHICLE?

B. IF THE ABOVE IS TRUE, WHICH UNIT IS HELD AS THE CONTROL UNIT AND WHICH UNIT IS THE ONE FOR WHICH THE OFF-SETS ARE GIVEN?

25X1 C. [redacted] USES THE FOLLOWING SIGN CONVENTIONS IN ITS PROGRAMS USING PITCH, ROLL, AND YAW. PLUS "Y" IS FLIGHT DIRECTION, PLUS "X" IS TOWARD "RIGHT WING" IN LINE-OF-FLIGHT, AND PLUS "Z" IS "UP". IF CONVENTIONS USED IN THE CALIBRATED DATA VARY FROM THESE, PLEASE SPELL OUT: POSITIVE PITCH (PLUS)

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IS A ROTATION AROUND THE "X" AXIS OF THE VEHICLE WHICH PUTS THE "NOSE-UP" OR TILTS THE MAIN MIRROR TO THE FORWARD-LOOKING POSITION. POSITIVE ROLL IS A ROTATION AROUND THE "Y" AXIS OF THE VEHICLE WHICH PUTS THE VEHICLE IN A "LEFT-WING-UP" ATTITUDE IN LINE-OF-FLIGHT (AIMS THE CAMERAS TO LEFT OF GROUND TRACK IN FLIGHT). POSITIVE YAW IS A ROTATION AROUND THE "Z" AXIS OF THE VEHICLE IN A COUNTER CLOCKWISE DIRECTION AS VIEWING THE GROUND FROM ABOVE THE VEHICLE IN LINE-OF-FLIGHT. (A NOSE-LEFT, TAIL-RIGHT ROTATION.) DO THE CALIBRATION FIGURES PRESENTED IN PARAGRAPH "P" OF THE R-47 FOLLOW THIS CONVENTION?

25X1 D. [redacted] ASSUMES THAT IN THIS CALIBRATION, EACH ROTATION IS CALIBRATED INDEPENDENTLY FROM THE OTHERS. THAT IS, HOLDING ONE UNIT FIXED, THE OFFSET IN ROLL ONLY IS GIVEN: THEN, PITCH, THEN YAW, PLANE FOR PLANE. IF [redacted] IS IN ERROR, PLEASE SPELL OUT THE CORRECTIONS TO THIS ASSUMPTION. 25X1

E. HOW ACCURATE IS THE CALIBRATION?

T O P S E C R E T

-END OF MESSAGE-